WHAT IS CLAIMED IS:

1.   A method of making an optical fiber preform comprising the steps of:

preparing a starting member by fusing a dummy rod
5   to each of both end portions of a core preform comprising a core and a cladding; and

spraying and depositing fine particles of glass synthesized by glass synthesizing burner(s) onto the outer periphery of said starting member so as to form a soot
10   body while axially reciprocating said starting member relative to one or a plurality of glass synthesizing burners while rotating said starting member about its axis;

wherein a marking point is set at a position separated from a junction between said core preform and each dummy
15   rod by A × (a target outside diameter of the soot body $[mm])^2$ [mm] (where $0.0015 < A < 0.0030$) toward the dummy rod, such that said reciprocating is effected by reversing the direction of a relative movement of said starting member and said one or a plurality of glass synthesizing burners
20   at each time when all of said glass synthesizing burners reach said marking point or beyond toward an end of said starting member, each said glass synthesizing burners are constantly supplied when located between said marking points.

25   2.   A method of making an optical fiber preform according to claim 1, wherein said reciprocating is

effected by reversing the direction of said relative movement at each time when the burner positioned closest to a center of said starting member among said glass synthesizing burners reaches said marking point position.

5   3.   A method of making an optical fiber preform according to claim 1, wherein a fuel gas supply to said glass synthesizing burners positioned on said starting member end portion side of said marking point are continued so as to heat an end portion of the soot body formed.

10   4.   A method of making an optical fiber preform according to claim 1, wherein an end portion of the formed soot body is heated by auxiliary burners disposed on said starting member end portion side of said marking point.

          5.   An apparatus for making an optical fiber

15   preform, in which a starting member prepared by fusing a dummy rod to each of both end portions of a core preform comprising a core and a cladding is axially reciprocated relative to one or a plurality of disposed glass synthesizing burners while the starting member is being

20   rotated about its axis; and fine particles of glass synthesized by the glass synthesizing burners are sprayed and deposited onto the outer periphery of the starting member so as to form a soot body;

          said apparatus comprising:

25   a holder member for holding at least one end of said starting member;

one or a plurality of glass synthesizing burners
for spraying soot particles toward said starting member;

a material supply device for supplying a glass
material to each of said glass synthesizing burners;

5   a moving device for axially reciprocating said
starting member relative to said glass synthesizing
burners while axially rotating said starting member;

an input device for inputting a target outside
diameter value d [mm] of the soot body to be formed or

10   a characteristic value necessary for a calculation
thereof; and

a control device for setting a marking point at a
position separated from a junction between said core
preform and each dummy rod by $A \times d^2$ [mm] (where 0.0015

15   < A < 0.0030) toward the dummy rod based on the inputted
target outside diameter value of the soot body or from
the target outside diameter value of the soot body
determined from the inputted characteristic value,
controlling said moving device so as to reverse the

20   direction of a relative movement of said moving device
and effect said axial reciprocating at each time when all
of said glass synthesizing burners reach said marking point
or beyond toward an end of said starting member, and
controlling said material supply device so as to constantly

25   supply the glass material to each of said glass synthesizing
burners when said glass synthesizing burners are located

between the marking points.